



Ferroglobe & Coreshell Sign a Memorandum of Understanding to Deliver World's First Battery-Grade Metallurgical Silicon for Electric Vehicles

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Partnership to enable development of the lowest cost, longest range EV batteries replacing graphite and silane-based silicon with metallurgical silicon for the first time

LONDON, March 11, 2024 (GLOBE NEWSWIRE) -- Ferroglobe PLC (NASDAQ: GSM), a world leading producer of silicon metal and ferroalloys, and Coreshell, a US-based battery technology company, today announced the signature of a memorandum of understanding. Together, Ferroglobe and Coreshell expect to produce the first battery-ready metallurgical silicon for the development of low-cost, high-range EV batteries in compliance with the U.S. Inflation Reduction Act. The partnership will enable the leapfrogging of silane-based silicon and the replacement of graphite in EV batteries, which have bottlenecked the auto industry since the introduction of electric vehicles, creating cost and range limitations.

Electric vehicles suffer from significant cost disadvantages for consumers and automakers alike, with batteries comprising 30-40% of the total cost of electric cars¹. Car manufacturers are interested in using silicon in batteries because it can store up to 10 times more energy in the anodes than graphite. This could potentially result in a 30 percent increase in driving range.

Coreshell's proprietary battery technology, featuring a unique nanomaterial electrode coating, is the only proven solution to mitigate the degradation of micrometric silicon, preventing its rapid loss of life while still allowing lithium ions to pass through. Ferroglobe's proprietary metallurgical purification process to produce up to 99.995% silicon is cost-effective and does not use any chemical reagent, a key technology for producing affordable silicon active material. These innovations enable, for the first time, the development of lithium-ion batteries with metallurgical silicon dominant anodes that meet product requirements for lifetime across a range of applications.

"We believe battery-grade, micrometric silicon is the fastest path to decarbonizing the mobility industry," said Benoist Ollivier, Chief Technology & Innovation Officer of Ferroglobe. "When the right battery technology partner and the leading supplier of silicon to the U.S. come together, breakthroughs can happen. Coreshell is a leading technology company that has been able to solve the raw metallurgical silicon degradation problem and unlock the true performance of this element. We are thrilled to partner with the battery material innovators at Coreshell and play our part in accelerating the transition to clean energy in the automotive industry for everyone."

"Silicon stores 10 times the energy of graphite and it is available in sufficient quantity and quality. It is the only viable pathway to low-cost, long-range electric vehicle batteries that can be scaled rapidly using a 100% domestic supply chain," said Jonathan Tan, CEO of Coreshell. "The issue to date is that no one has been able to unlock the power of metallurgical silicon, and the high cost and scaling challenges of highly engineered or silane-based synthetic Silicon anodes have prevented the industry from benefiting from its true potential. With Ferroglobe's silicon and Coreshell's technology, we have unlocked that power. We are simplifying silicon and stripping out the costs so we can deliver the lowest cost, long range EV batteries in existence."

¹ IEA. [Global Supply Chains of EV Batteries](#). (2022)

About Ferroglobe

Ferroglobe is a leading global producer of silicon metal, silicon-based and manganese-based ferroalloys serving a customer base across the globe in dynamic and fast-growing end markets, such as solar, automotive, consumer products, construction and energy. The Company is headquartered in London. For more information, visit www.ferroglobe.com.

About Coreshell

Coreshell is an advanced battery solutions company that increases the range of electric vehicles while bringing down costs — so the world can transition to clean energy in time. Easily applied onto the surface of the electrodes in lithium-ion batteries during the manufacturing process, Coreshell's technology has proven to extend capacity of these batteries by 30 or more percent - while reducing costs for automakers. Headquartered in California, Coreshell partners include multinational battery manufacturers and auto OEMs committed to zero emissions and paving the future of transportation.

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